

**Oregon Tualatin Valley
Amateur Radio Club**

The OSCILLATOR

SEPTEMBER 2009

Issue 2009:09
Our 31st Year

The Oregon Tualatin Valley Amateur Radio Club is a special service club related to ARRL: The National Association for Amateur Radio. We seek to advance the Amateur Radio Service through:

- ⇒ Education and Training of new and licensed amateurs
- ⇒ Public Service and Emergency communication
- ⇒ Hobby nets, contests and meetings
- ⇒ Social events

Membership is available to anyone. An amateur radio license is not required.

HAPPY BIRTHDAY: MICROCHIP

"The microchip was invented not by a vast team of physicists but by one man working alone, a self-described tinkerer - not even a physicist, but an engineer - named John St. Clair (Jack) Kilby. ...

"In 1947, he got a job at the Centralab division of Globe Union in Milwaukee, working on miniaturizing circuits. That year, William Shockley invented the transistor at Bell Laboratories, revolutionizing the world of electronics.

"Before transistors, electrical devices were powered by vacuum tubes, which were big, heavy, fragile, and very hot. By contrast, transistors were compact and light; they had no moving parts, they ran cool, and the switching and amplifying were handled by a semiconductor, not a glass bulb. ... By Christmas 1954, the first transistor radio, small enough to fit in a pocket, hit the market at a retail price of \$49.95 and quickly became the biggest-selling consumer product the country had ever seen. ...

"[But progress beyond things like the transistor radio was difficult.] The problem was this. If you wanted a computer or some other electronic device to perform more complex operations more quickly, you would need an extra set of components - transistors, resistors, capacitors, diodes, rectifiers, and the wires to connect them all into a circuit - for each increment in speed, memory, or storage space.

See Microchip Birthday, Page 7

CLUB MEETING

Wednesday, September 9th

Our club meeting will be held at The Peppermill Restaurant in Beaverton on Wednesday, September 9th. Come at 6:00 PM for interaction with other club members and enjoy a meal off the menu.

Our Meeting and Program begin at 7:00 PM for all. Randy Pitchford WW7ZZ of Tualatin will discuss innovative antenna design

Family members and friends are welcome to come with you. Guests are always welcome and an amateur radio license is not required.

Check out our web site:
www.otvarc.org.

REPEATER MAINTENANCE HELPERS NEEDED

Our club owns and operates three repeaters from a site called Goat Mountain which is near the town of Colton. The site is at 4,219 feet and from this location our repeaters cover a large area. The clubs' equipment is located inside a building provided by our landlord, Clackamas County. Access to the site is via a mainly gravel roads owned and controlled by Weyerhaeuser. For a long time, the equipment has been maintained by one person, Wes Allen K7WWG. Wes has had help off-and-on over the years from both members and non-members of the club.

Recently, Wes brought up a concern about maintenance of the site should something happen to him. So the club, and Wes, are looking for someone to join him. We're looking for individuals who already have training and skills in the maintenance of VHF and UHF repeaters and associated equipment. To become trained to do this kind of work takes a long time, months if not years. Wes has tried to do find assistance off-and-on over the years, to get folks to help and some have come forward. It was not a well executed plan, Wes admits. So again, please consider volunteering to help out if you have the time and talent. Contact Wes, or any member of the Board of Directors to volunteer or with questions.

PORTABLE 10-METER QUADS

In the July 2007 issue of *TEN-TEN INTERNATIONAL NEWS*, L. B. Cebik W4RNL (SK) offered a two-page article on 10-Meter quad antennae. It was number 56 in a series of articles running in that publication.

The article outlines several options for configurations of the quad loop designed for 10-Meters. Cebik always gives the technical detail but is easy to read and understand. The article can easily be used to determine what materials and tools are needed to create a 10-Meter Quad.

Cebik describes a quad antenna built entirely from wire. He explains how your choice of wire type will determine the operating frequency range for your new antenna. Do you want to build a rectangle or a square loop? He gives a discussion of the trade-offs. Construction approach is discussed as well.

Prefer a more stable finished product? Cebik discusses using simple wood, plastic, or CPVC pipe supports for your new 10-Meter Quad.

Do you plan to use your Quad as a field antenna? Transportation is an issue...and Cebik suggests what to build and how to transport it.

What would Cebik build? He tells us that he prefers a rectangle built with 3/4" L-stock and side wires. He liked the ability to loosen the L-stock and fold the sides next to the mast section. The result is a folded antenna wrapped with its own wire into a secure bundle.

With Cycle 24 coming to life, and 10-Meters showing new activity, it is time to consider what you'll carry along for that picnic or other outing. The discussion of Quads will help you think about such an antenna for your home station, too. Its amazing how a quad antenna blends in with the surrounding landscaping...escaping the curious eyes of your CC&R committee.

Want a copy of the original article? Send an email request to otvarc@gmail.com.

— Everett W6ABM

SEPTEMBER PREPAREDNESS MONTH



Ready

Prepare. Plan. Stay Informed.

National Preparedness Month is sponsored by the Ready Campaign and Citizen Corps and is held each September.

September 2009 is the sixth annual NPM. It is designed to encourage Americans to take simple steps to prepare for emergencies in their homes, businesses and communities. In 2008, the Ready Campaign partnered with more than 3,200 organizations to highlight the importance of public emergency preparedness throughout September.

This year will focus on changing perceptions about emergency preparedness and helping Americans understand what it truly means to be Ready. The Campaign's Web sites and toll-free numbers provide Americans with free emergency preparedness information:

www.ready.gov and listo.gov
800-BE-READY and 1-888-SE-LISTO

You can register your group and show your community service in this area by going to <http://ready.adcouncil.org/>

Last year hundreds of ARES and Amateur Radio groups signed up to participate. There were so many that this year, in the place where the form asks "How would you describe your organization?" there is a special Amateur Radio group designation.

"National Preparedness Month is a great time for the American public to learn about how to prepare for natural disasters and the ever-present threat of terror-strikes," said FEMA Regional Administrator Susan Reinertson. "This year's themes focus on taking simple, but potentially life-saving steps to enhance preparedness, including: Get an Emergency Supply Kit; Make a Family Emergency Plan; Be Informed about the different types of emergencies and their appropriate response; and Get Involved in your community's preparedness efforts."

- Compiled from Various Sources

PASSING THE TECH TEST

By Dan Romanchik, KB6NU

I teach One-Day Tech classes. At the start of each class, I go over the following to help focus students on what to keep in mind when taking the test. It occurs to me that these are good tips no matter who is taking the test, so if you know someone who will be testing soon, please feel free to pass along this advice.

Technical Topics

The Tech test is not very technical, but there are three technical topics that you need to know:

- * Ohm's Law,
- * how to calculate power, and
- * the relationship between frequency and wavelength.

Ohm's Law

The basic formula for Ohm's Law is voltage (E) equals current (I) times resistance (R), or $E = I \times R$. On the test, there are several questions where they give you two of the values and ask you to calculate the third. If you're asked to calculate the current, you use the formula, $I = E / R$. If you need to calculate the resistance, use the formula $R = E / I$.

How to Calculate Power

The formula for calculating power is power (P) = voltage (E) times current (I), or $P = E \times I$. To calculate the current drawn, when given the power being consumed and the voltage applied to the circuit, use the formula $I = P / E$.

Relationship Between Frequency and Wavelength

There are several questions that require you to calculate the wavelength of a signal or some fraction of the wavelength. The reason for this is that antennas are often a fraction of a wavelength.

The formula that describes the relationship between frequency and wavelength is wavelength in meters = $300 / \text{frequency in MHz}$. One question asks for the approximate length of a quarter-wavelength vertical antenna for 146 MHz. To figure that out, you first calculate the wavelength: $\text{wavelength} = 300 / 146 = 2.05 \text{ m}$ or about 80 inches

One quarter of 80 inches is 20 inches, and the antenna will actually be a little bit shorter than that because radio travels more slowly in wire than it does in free space. The correct answer to this question is 19 inches.

That's all there is to the technical part of the test!

Safety

There are lots of questions on the test about operating safely and being safe when working on antennas. My advice when answering these questions is to always choose the most conservative answer. The two exceptions are when asked what is the lowest voltage and current that can hurt you. For these questions, the correct answer is the second lowest choices.

Emergencies

There are lots of questions about what to do in emergencies. There are two things to keep in mind when answering these questions:

- * You should do whatever you can to help someone who is in an emergency situation.
- * You can even break the rules to help someone in an emergency situation. This includes operating on frequencies you are normally not allowed to operate on and communicating with other stations in other radio services.

Miscellaneous Tips

Here are a couple of other miscellaneous tips:

- * The answer is 'D.' If one of the answers to a question is, "D. All of these answers are correct," chances are that is the correct answer. There are 18 questions with this option, and of those 18 questions, there are only two questions—T3B06 and T5B03—where that is not the correct answer.

- * Long-Answer Rule. Where one answer is a lot longer than the other options, chances are that this is the correct answer. I haven't done an exhaustive study of this, but when one answer is very long, take a good, hard look at it.

That's all I have. Good luck on the test!

When not helping people pass the Tech test and become good amateur radio operators, Dan likes to work CW on the HF bands and collect QSL cards from stations whose callsigns spell words. What is he up to? Go to www.kb6nu.com

VANITY LICENSE FEE NOW \$13.40

On August 11, the FCC announced that the cost of an Amateur Radio vanity call sign will increase \$1.10, from \$12.30 to \$13.40.

Now that notice of the increase has been published in the Federal Register, the increase will take effect in 30 days, September 10, 2009.

The FCC is authorized by the Communications Act of 1934, As Amended, to collect vanity call sign fees to recover the costs associated with that program. The vanity call sign regulatory fee is payable not only when applying for a new vanity call sign, but also upon renewing a vanity call sign for a new 10 year term.

The notice in the August 11, 2009 Federal Register, entitled "Assessment and Collection of Regulatory Fees for Fiscal Year 2009," includes regulatory fees. These fees are expected to recover a total of \$341,875,000 during FY2009, encompassing all the Services the FCC regulates.

LUNCH BUNCH

Join us for LUNCH BUNCH
Saturday, September 26, 2009
1:30 pm

China Bay Restaurant
13281 SW Canyon Road
Beaverton, Or. 97005
503.350.1688

Talk-In: W7OTV - 146.960

Information?
Linda KC7YTD

W7TVC ON YOUTUBE

In the 2008 CQ WW DX Contest, Tualatin Valley Contesters fielded an entry. J11CZK captured a pile up that included W7TVC:

<http://www.youtube.com/watch?v=mKxpHsONbN8>
Listen 2 min 38 sec into the clip.

OTVARC ADDRESS:

880 NE 25th Ave Ste 2-160
Hillsboro OR 97124-6258
otvarc@gmail.com

WORLDWIDE DISTRIBUTION

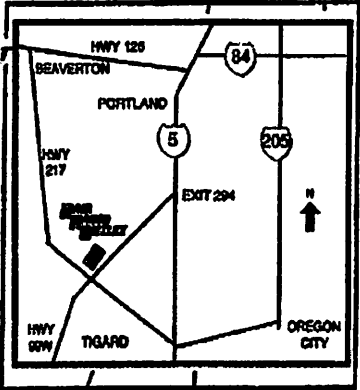
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ICOM 4-pin Microphone - \$10

Hustler Model 144 2-Meter Mobile Stick - \$20

Heath HW2 2-Meter HT - \$50

PRO 2037 Tripple Conversion Scanner - \$125

Radio Shack 200 Channel Base Scanner

Realistic HTX-100 Mint - \$125

10-Meter SSB/CW Mobile Xcvr

Tempo 1 HF Rig - Mint - \$250

With matching spkr/pwr supply - 240 watts input

Two Radio Shack BTX-127 HTs - \$95 Pair

FM Business Band - 9 Channel Switching

New Battery Packs - 5 MURS no license channels

HAMFESTS & CONVENTIONS

26 September 2009
Washington State Conv
www.kbara.org
 Betsy Ashleman, N7WRQ
 3903 East 48th Avenue
 Spokane, WA 99223-7866
 509-448-5821
 509-448-5821
n7wrq@aol.com

9 - 12 OCTOBER 2009
Pacific NW VHF Conf
<http://pnwvhfs.org>
 Shilo Inn North Prom
 Seaside Oregon
 Scott Honaker, N7SS
 14014 89th Avenue SE
 Snohomish, WA 98296
 425-330-5439
 Fax: 360-668-6073
n7ss@arri.net

24 October 2009
Swap-Tober - Fest
 Polk County Fairgrounds
 520 S Pacific Highway West
 Rickreall, Oregon
 Hwy 99W
www.swaptoberfest.net/preregistration.html
 Information:
www.swaptoberfest.net

Happy September Birthday

7	Luther W Brisky	KC7KVL
15	Michael Bloom	W7RAT
15	Bob Heath	KD7OHF
17	James Bryant	KD7WZI
19	Gerald Burn	KA7UQO
23	Ryan Heath	KD7QZL
28	Dick Lukins	KD7YGB

Have we missed your birthday?
 Likely we do not have your correct date in our database.
 Send updates and corrections to otvarc@gmail.com

HEALTH AND WELFARE

Your prayer and encouragement are solicited for *Frances Adams KB8PRL*, daughter of Betty Mickley N7REX, as she deals with a recent diagnosis of ALS. Her father, Chuck Mickley SK, lived with this disease previously.

Your **business advertising** in *THE OSCILLATOR* is seen each month by more than 200 members read *THE OSCILLATOR*.

To include your "Business Card" ad (\$48.00 annually) or "Display" - HRO size ad (\$60.00 annually), contact **Maureen O'Rourke** at 503.591.9641. There is currently limited space available.



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TRAVELERS' TO WATERLOO

Waterloo Lane County Park
Lane County Park
September 18 - 19, 2009

From I-5, take the Hwy. 20 exit east through Lebanon. Waterloo County Park is located 5 miles east of Lebanon off of Hwy. 20 in the town of Waterloo.

This pleasant park on the banks of the South Santiam River provides families with a great opportunity to fish, hike, swim and relax within its shady confines. This campground is open year round offering electrical/water hookups, a dump station, shower facilities and a picnic shelter. Of the 120 campsites available, 100 have power and water hookups, including 4 ADA accessible sites. RESERVATIONS: 541-967-3917

Wagonmasters:
Mary and Al Berg
503.816.7098
almaryberg@comcast.net

Non-camping guests are welcomed, too. Just let the wagonmasters know you're planning to come.

WANT YOUR OWN IRLP NODE?

All of us would like to see IRLP and Internet Radio grow in popularity. Dick Honey KE7IEE and Don Baldwin AA2V would like to help more people get personal nodes so they can enjoy more than the Las Vegas Western Reflector with IRLP.

Don built his first IRLP node about ten months ago. Setting up the components was a good experience that led him to learn more about computers and IRLP. Since then, he has been enjoying IRLP on a daily basis with many enhancements not possible through a repeater-based system like W7RAT. Last month, he helped Dick Honey KE7IEE build a node. He really enjoys his and uses it everyday.

Dollar for dollar, Don would say his investment in IRLP is the best money he has spent in Ham Radio. He enjoys talking to people all over the world. IRLP enables him to actually get to know other people rather than just comparing signal strength. IRLP will never replace HF. For those of us living in antenna-restricted communities, IRLP is a great way to enjoy hamming without a large antenna and tower. For HF aficionados, IRLP provides a means to set up QSOs with hams from other nations.

Don is embarking on building a portable node for use in his car and office. Dick would like to build two more nodes. Both have many friends who would like to build nodes as well. Dick, Don, and Bob Miller K7ZH saw that Dave Cameron is offering discounts on multi-board purchases. The discounts are worth while:

Retail Cost of an IRLP board is \$105.00 plus \$13.00 shipping, for a total of \$118.00. Five boards going to the same address cost per board \$98.00 plus \$5.60 shipping, total of \$103.60. Ten boards to the same address cost per board \$90.00 plus \$3.20 shipping for a total of \$93.20.

Options above save between \$14.40 and \$29.80. Each board includes: IRLP board; parallel port cable; ribbon cable; and, two metal pieces to fit in expansion slots. Dick and Don would not charge anything extra (no profit) on this order. They just want a self-funding approach to a group buy. Here is their offer: If you would like in on the buy, send a \$20.00 nonrefundable deposit to Don's PayPal account at db@donbaldwin.org and send Don an email explaining who you are and that you sent money to his PayPal account. On September 20th, Don will get a final quote on freight and board costs and pass that along to you. The remaining balance would be due by October 1st. They have commitments for six boards. The final price will depend on additional commitments and shipping costs. Boards will be shipped to Don's home in Milwaukie Oregon and should arrive by October 9th. Each ham will have to pick up his/her board or provide reshipping costs. Don will bring boards an OTVARC meeting.

See IRLP, Page 8 (Shipping Cover)

OREGON TUALATIN VALLEY AMATEUR RADIO CLUB
2009 Member Survey

1. Please select what you like most about OTVARC. (Choose ONE)

- ☐ Member Interaction
- ☐ Club Member Meetings
- ☐ Club Special Events
- ☐ Programs at Meetings

2. Please select what you like least about OTVARC. (Choose ONE)

- ☐ Member Interaction
- ☐ Club Member Meetings
- ☐ Club Special Events
- ☐ Programs at Meetings

3. If you could change one thing about our club Member Meetings, what would that be? (Choose ONE)

- ☐ Meeting Night
- ☐ Meeting Location
- ☐ Order of Events At Meeting
- ☐ Programs at Meetings

4. Concerning our Club Meeting, I best like: (Choose ONE)

- ☐ Member Interaction
- ☐ Food
- ☐ Programs
- ☐ Club Officer Leadership

5. Concerning Our Club Meeting, I least like: (Choose ONE)

- ☐ Member Interaction
- ☐ Food
- ☐ Programs
- ☐ Club Officer Leadership

6. What do you like most about our present Club Meeting location, The Peppermill? (Choose ONE)

- ☐ Distance from work/home
- ☐ Parking
- ☐ Restaurant Staff Welcome
- ☐ Table Seating

7. What do you like least about our present Club Meeting location, The Peppermill?

- ☐ Distance from work/home
- ☐ Parking
- ☐ Restaurant Staff Welcome
- ☐ Table Seating

8. Enter your 1st, 2nd, and 3rd choice for best program.

- ___ Magic of HF Radio - Dave Haupt/Ron O'Connor
- ___ Emergency Rescue - Russ Ruby
- ___ 900 MHz Repeaters – Tom Apel
- ___ IRLP – Michael Bloom
- ___ Amateur Radio Callsigns – Everett Curry
- ___ Wikipedia In Amateur Radio -

9. Which of these club events do you enjoy most?

- ___ Anniversary Donner
- ___ Ice Cream Social
- ___ Holiday/December Reception/Party

10. What presentations, trainings, or projects would you like to see or do?

11. What do you appreciate most about The OSCILLATOR?

12. What do you use most on our internet web site?

What else would you like to say to your Board of Directors?

Signature _____
Optional

- ☐ Have the Elections Committee contact me. I would consider serving on the Board of Directors.

Send your completed survey to *OTVARC, 880 NE 25th Ave, Suite 2-160, Hillsboro, OR 97124-6258*. If you wish to email your completed survey, *otvarc@gmail.com*

MICROCHIP BIRTHDAY, from Page 1

The futuristic miracle machines of science fiction would require so many extra components - and so much wiring, all connected precisely by hand - that, as a practical matter, they could not be built... The barrier was called 'the tyranny of numbers.'

"Miniaturization became every electronics firm's mantra. ... Still, miniaturization alone wouldn't topple the tyranny of numbers. In some ways, because smaller components were more difficult to wire, it only intensified the problem. To break through the barrier would require a whole new approach. But what was it?

"In May 1958, Kilby moved from Milwaukee to Dallas to take a job with Texas Instruments, which had just opened a new building devoted to semiconductor research. In July, most employees took their two-week summer vacation, but Kilby hadn't been with the company long enough to earn the time off. So he stayed at the new lab and thought about the problem, all alone.

"Texas Instruments had made a big investment in silicon, so he focused on that as his basic material. Typically, silicon would be purified for the manufacture of transistors. But if it were treated with certain impurities, it could be used as a conductor. Treated and molded in another way, it could serve as a resistor. It could be the material for any component in a circuit - not the ideal material, but good enough.

"This was Kilby's initial insight, ... but this realization sparked a much larger conceptual breakthrough, the basis for a solution to the fundamental problem, the tyranny of numbers: If all the parts of a circuit could be made from the same material, maybe they could all be manufactured on a single monolithic slab. If you wanted more complexity, you wouldn't need more components or more wiring and soldering to connect them.

"On July 24, Kilby drew a rough sketch of the idea in his lab notebook and wrote, 'The following circuit elements could be made on a single slice: resistors, capacitor, distributed capacitor, transistor.' Thus was born the

integrated circuit. ...

"There was no guarantee that the integrated circuits would get off the ground. ... In the beginning, they were very expensive. To make a dent in the marketplace, they'd have to be much cheaper; but to be cheaper, they would have to have made a big dent in the marketplace - there would have to be high demand, so that they could be produced in mass quantity. That wouldn't happen until the beginning of the sixties, when President John Kennedy ordered production of the Minuteman II missile - which required tiny, reliable circuits for its guidance system - and, especially, when he set the goal of putting a man on the moon by the end of the decade. Missiles and space created the large demand. In 1961, a single chip cost \$32. By 1971, thanks to the economies of large-scale production, the cost would plunge to \$1.25. (By 2000, after the consumer market had vastly expanded, the price of a much more powerful chip would be less than a nickel.)

"As with many of the breakthroughs converging on the eve of the sixties, the space race and the arms race - the twin prospects of infinite expansion and instant annihilation - spurred America and the world into a lightning-flash new era."

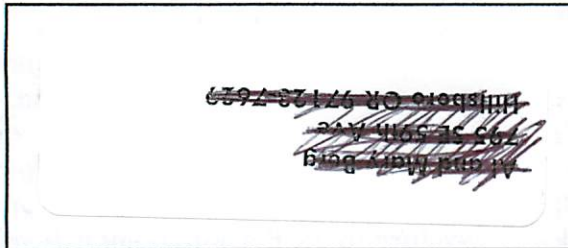
Fred Kaplan, 1959: The Year Everything Changed, Wiley, Copyright 2009 by Fred Kaplan, pp. 76-81.

ELECTIONS COMMITTEE

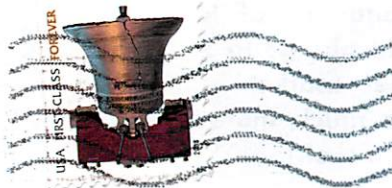
Our president, Bob WN7O, is charged in our Bylaws to appoint our Election Committee. In fulfillment of that duty, he has appointed Joel Simmons AD7IS, Trustee on the current board, to represent the Board of Directors. Two or more other members are required for the Committee. To offer your service, contact Bob at krCrocker@comcast.net. The Committee receives member interest in running for the Board, contacts and recruits members, and completes the official count of ballots on December 9th. We will elect three trustees and all four officers in this election.

9712347623

CLUB MEETING
SEPTEMBER 9TH



FIRST CLASS MAIL



PORTLAND OR 972
04 SEP 2009 PM 2:17

Web: WWW.OTVARC.ORG
w7otv@arrl.net
Simplex: 147.54 MHz
Repeaters: 146.96 MHz (Goat Min)
223.94 MHz (Goat Min)
440.250 MHz (Goat Min)
440.350 MHz (127.3 KGON Tower)
Editor: Everett W6ABM w6abm@arrl.net

OREGON TUALATIN VALLEY
AMATEUR RADIO CLUB
880 NE 25th Ave. Ste 2-160
Hillsboro OR 97124-6258

IRLP, from Page 6...

Every node consists of an IRLP capable computer (see IRLP.net for specifics), an IRLP board, a node radio with dummy load or antenna, an Internet Connection (broadband), an Ethernet cable, and a cable to link the node radio with the computer. Node computers are usually obsolete towers that can be found very inexpensively. We have a \$40.00 computer source. Many old discarded computers are more than good enough. Dick and Don are willing to provide technical support over the phone or over the radio. They are planning a get together where each person may bring their node components and assemble them as a group. More information, contact Don AA2V at db@donbaldwin.org.



NORTHWESTERN DIVISION ARRL CONVENTION
SEASIDE CONVENTION CENTER
Seaside Oregon

June 4 - 6, 2010